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L3: Entry 4 of 4 File: USPT Nov 16, 1999

US-PAT-NO: 5986051
DOCUMENT-IDENTIFIER: US 5986051 A

TITLE: Genes of Helicobacter pylori necessary for the regulation and maturation of urease and their use

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Labigne; Agnes	Bures Sur Yvette			FR
Cussac; Valerie	Paris			FR
Ferrero; Richard	Paris			FR

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Institut Pasteur	Paris			FR	03
Institut National de la Santa et de la Recherche Medicale	Paris			FR	03

APPL-NO: 08/ 211312 [PALM]
DATE FILED: July 1, 1994

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
FR	91 12198	October 3, 1991

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/FR92/00921	October 2, 1992	WO93/07273	Apr 15, 1993	Jul 1, 1994	Jul 1, 1994

INT-CL: [06] C07 K 1/00, C07 K 16/00, A61 K 38/00, A61 K 38/04

US-CL-ISSUED: 530/350; 530/300, 530/328, 530/388.1, 530/387.1, 530/389.5
US-CL-CURRENT: 530/350; 530/300, 530/328, 530/387.1, 530/388.1, 530/389.5

FIELD-OF-SEARCH: 530/300, 530/350, 530/328, 530/388.1, 530/387.1, 530/389.5

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4785086	November 1988	Rashtchian et al.	536/27
☐	5459041	October 1995	Blaser et al.	
☐	5498528	March 1996	King	
☐	5538729	July 1996	Czinn et al.	
☐	5601848	February 1997	Marshall	

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
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0 745 674	May 1996	EP	
90 04030	April 1990	WO	
WO 91 09049	June 1991	WO	
WO 96/33732	October 1996	WO	
WO 96/40893	December 1996	WO	
WO 96/38475	December 1996	WO	

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G. Perez-Perez et al., "Characteristics of Helicobacter pylori Variants Selected for for Urease Deficiency", Infection and Immunity, vol. 60, No. 9, pp. 3658-3663, Sep. 1992.
Li-Tai Hu et al., "Purification of Recombinant Helicobacter pylori Urease Apoenzyme Encoded by UreA and UreB", Infection and Immunity, vol. 60, No. 7, pp. 2657-2666, Jul. 1992.
V. Cussac et al., "Expression of Helicobacter pylori Urease Genes in Escherichia coli Grown Under Nitrogen-Limiting Conditions", J. Bacteriology 174(8):2466-2473 (Apr. 1992).
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T. Sugiyama et al., "A Novel Enzyme Immunoassay for Serodiagnosis of Helicobacter pylori Infection", Gastroenterology 101:77-83 (1991).

ART-UNIT: 165

PRIMARY-EXAMINER: Minnifield; Nita

ATTY-AGENT-FIRM: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

ABSTRACT:

This invention relates to Helicobacter polypeptides, particularly UreE, UreF, UreG, UreH, and UreI, immunogenic fragments of those polypeptides, and compositions containing those polypeptides or fragments. This invention also relates to purified antibodies that bind to the polypeptides of this invention and to compositions comprising those antibodies.

16 Claims, 24 Drawing figures

13793169 PMID: 9492267

Characterisation of a binding-protein-dependent, active transport **system for short-chain** amides **and urea in the methylotrophic** bacterium **Methylophilus methylotrophus.**

Mills J; Wyborn N R; Greenwood J A; Williams S G; Jones C W
Department of Biochemistry, University of Leicester, England.

European journal of biochemistry / FEBS (GERMANY) Jan 15 1998, 251 (1-2) p45-53, ISSN 0014-2956 Journal Code: 0107600
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed
Subfile: INDEX MEDICUS

Three genes (fmdCAB) encoding an outer-membrane porin for short-chain amides and urea, formamidase, and a putative regulatory protein in Methylophilus methylotrophus have previously been cloned and characterised. Three genes have now been identified downstream of fmdB, viz fmdD encoding a hydrophilic protein containing an N-terminal signal sequence, and fmdEF encoding hydrophobic transmembrane proteins. The derived amino acid sequence of mature FmdD (predicted molecular mass 41,870 Da) was similar to the cytoplasmic, amide-binding protein (AmiC) from Pseudomonas aeruginosa and to several periplasmic, solute-binding proteins from other **bacteria** . Mature FmdD was purified and shown to be a monomer (40-45 kDa) with the predicted N-terminal amino acid sequence (ADYPTA-). Equilibrium dialysis showed that the purified protein bound short-chain amides and urea with high affinity (Kd 7.2 microM for [14C]urea). SDS/PAGE and western blotting using antiserum to mature FmdD showed it was induced by short-chain amides and urea, and repressed by excess ammonia. The derived amino acid sequences of FmdE (32,822 Da) and FmdF (incomplete; >25,435 Da) were similar to the transmembrane proteins BraD/LivH and BraE/LivM, respectively, in various leucine/isoleucine/valine transport systems. Uptake of [14C]urea by washed cells was **inhibited** by the uncoupling agent carbonyl cyanide p-trifluoromethoxyphenylhydrazone and unlabelled formamide. It is concluded that FmdDEF comprise part of a high-affinity, binding-protein-dependent active- **transport** system for short-chain **amides** and urea in M. methylotrophus.

Tags: Support, Non-U.S. Gov't
Descriptors: Amides--metabolism--ME; * **Bacterial** Proteins--genetics--GE; * **Bacterial** Proteins--metabolism--ME; *Gram-Negative Aerobic Rods and Cocci--chemistry--CH; *Membrane Proteins--genetics--GE; *Membrane Proteins --metabolism--ME; *Periplasmic Binding Proteins; *Porins--genetics--GE; *Porins--metabolism--ME; *Urea--metabolism--ME; Amino Acid Sequence; **Bacterial** Proteins--chemistry--CH; Base Sequence; Biological Transport; Gene Expression Regulation, **Bacterial** ; Gram-Negative Aerobic Rods and Cocci--genetics--GE; Gram-Negative Aerobic Rods and Cocci--metabolism--ME; Membrane Proteins--chemistry--CH; Molecular Sequence Data; Sequence Analysis; Sequence Homology, Amino Acid
Molecular Sequence Databank No.: GENBANK/Y14964
CAS Registry No.: 0 (Amides); 0 (Bacterial Proteins); 0 (Membrane Proteins); 0 (Periplasmic Binding Proteins); 0 (Porins); 0 (fmdD protein); 0 (fmdE protein, Methylophilus methylotrophus); 0 (fmdF protein, Methylophilus); 142462-53-1 (AmiC protein, Pseudomonas aeruginosa); 57-13-6 (Urea)
Record Date Created: 19980323
Record Date Completed: 19980323

Search Results - Record(s) 1 through 2 of 2 returned.

L2: Entry 1 of 2 File: USPT Apr 25, 1995

US-PAT-NO: 5409903
DOCUMENT-IDENTIFIER: US 5409903 A

TITLE: Method and compositions for the treatment of H. pylori and dermatitis

DATE-ISSUED: April 25, 1995

US-CL-CURRENT: 514/23; 424/402, 424/447, 424/449, 424/451, 424/464, 424/489, 424/499, 514/865, 514/870, 514/925, 602/904

INT-CL: [06] A61 K 9/50, A61 K 15/00, A61 K 9/26

L2: Entry 2 of 2 File: USPT Mar 2, 1993

US-PAT-NO: 5190961
DOCUMENT-IDENTIFIER: US 5190961 A
**** See image for Certificate of Correction ****

TITLE: Thiourea derivatives and antimicrobial agent and antulcer agent containing the same

DATE-ISSUED: March 2, 1993

US-CL-CURRENT: 514/331; 514/308, 514/318, 514/326, 514/343, 514/353, 514/422, 514/428, 514/438, 514/447, 514/471, 514/472, 514/586, 546/193, 546/213, 546/214, 546/231, 546/276.4, 546/305, 546/331, 548/517, 548/527, 548/567, 549/482, 549/496, 549/69, 549/77, 564/17, 564/22, 564/23, 564/27

INT-CL: [05] A61K 31/445, A61K 31/40, A61K 31/17, A61K 31/34, C07L 335/12, C07D 403/10, C07D 405/10, C07D 409/10

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       (c) format only 2004 The Dialog Corp.
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have changed. Please see HELP NEWS 154 for details.

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        473457  ANTAGON?
        356755  BLOCK?
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DATE: Tuesday, April 20, 2004

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☐	L1	6258359.pn. and urei	1
☐	L2	L1 and (treat$ or prevent$ or therapeut$)	1
☐	L3	labigne.in. and ((urei or ure-i) same antibod$)	4
☐	L4	('5986051' |'6258359' |'6416968' |'6190667')!.PN.	4

END OF SEARCH HISTORY

Search Results - Record(s) 1 through 4 of 4 returned.

L4: Entry 1 of 4 File: USPT Jul 9, 2002

US-PAT-NO: 6416968
DOCUMENT-IDENTIFIER: US 6416968 B1
**** See image for Certificate of Correction ****

TITLE: Methods of inhibiting Helicobacter pylori

DATE-ISSUED: July 9, 2002

US-CL-CURRENT: 435/32; 424/141.1, 424/150.1, 424/184.1, 424/234.1, 424/236.1, 424/94.1, 435/106, 435/12, 435/18, 435/252.1, 435/29, 435/4, 435/6, 435/69.1, 514/230.5, 514/44, 530/300, 530/350

INT-CL: [07] C12 Q 1/18

L4: Entry 2 of 4 File: USPT Jul 10, 2001

US-PAT-NO: 6258359
DOCUMENT-IDENTIFIER: US 6258359 B1
**** See image for Certificate of Correction ****

TITLE: Immunogenic compositions against helicobacter infection, polypeptides for use in the compositions, and nucleic acid sequences encoding said polypeptides

DATE-ISSUED: July 10, 2001

US-CL-CURRENT: 424/141.1; 424/150.1, 424/163.1, 424/164.1, 530/350, 530/388.1, 530/388.2, 530/388.4

INT-CL: [07] A61 K 39/395, A61 K 39/40, C07 K 1/00, C07 K 16/00

L4: Entry 3 of 4 File: USPT Feb 20, 2001

US-PAT-NO: 6190667
DOCUMENT-IDENTIFIER: US 6190667 B1

TITLE: Methods of inhibiting Helicobacter pylori

DATE-ISSUED: February 20, 2001

US-CL-CURRENT: 424/234.1; 424/780, 435/32

INT-CL: [07] A61 K 39/02

L4: Entry 4 of 4 File: USPT Nov 16, 1999

US-PAT-NO: 5986051
DOCUMENT-IDENTIFIER: US 5986051 A

TITLE: Genes of Helicobacter pylori necessary for the regulation and maturation of urease and their use

DATE-ISSUED: November 16, 1999

US-CL-CURRENT: 530/350; 530/300, 530/328, 530/387.1, 530/388.1, 530/389.5

INT-CL: [06] C07 K 1/00, C07 K 16/00, A61 K 38/00, A61 K 38/04

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Search Results - Record(s) 1 through 31 of 31 returned.

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3. 6552047. 17 Nov 99; 22 Apr 03. H2 receptor antagonist compounds in combination with nitric oxide donors, compositions and methods of use. Garvey; David S., et al. 514/331; 514/365 514/370 514/398 514/400 514/471. A61K031/416.

4. 6517809. 01 Aug 00; 11 Feb 03. Process for preparing a reactive pharmaceutical product for the detection of gastrointestinal disorder caused by bacteria in the gastrointestinal superior tract. Marshall; Barry J.. 424/1.37; 424/1.25 424/1.29 424/1.33 424/1.81. A61K051/00.

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6. 6312918. 18 Apr 95; 06 Nov 01. Examination method of infection with Helicobacter pylori. Ito; Masaharu, et al. 435/34; 435/12. C12Q001/04.

7. 6258359. 06 Jun 95; 10 Jul 01. Immunogenic compositions against helicobacter infection, polypeptides for use in the compositions, and nucleic acid sequences encoding said polypeptides. Labigne; Agnes, et al. 424/141.1; 424/150.1 424/163.1 424/164.1 530/350 530/388.1 530/388.2 530/388.4. A61K039/395 A61K039/40 C07K001/00 C07K016/00.

8. 6228605. 26 Mar 97; 08 May 01. Detection of helicobacter pylori in the stomach. Marshall; Barry J.. 435/34; 435/12. C12Q001/04.

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10. 6187556. 02 Dec 99; 13 Feb 01. Composition, kit, and method for detecting Helicobacter pylori in biopsy. Lee; Jong-Hwa, et al. 435/34; 435/12 435/975. C12Q001/04 C12Q001/58 G01N033/53.

11. 6171811. 20 Jul 99; 09 Jan 01. Method and kit for detecting Helicobacter pylori. Becerro De Bengoa Vallejo; Ana. 435/34; 435/29 435/968 435/975. C12Q001/04 C12Q001/02 G01N033/53.

12. 6149908. 22 Jul 98; 21 Nov 00. Use of lactoperoxidase, a peroxide donor and thiocyanate for the manufacture of a medicament for treating Helicobacter pylori infection. Claesson; Carl Olof, et al.

424/94.4;. A61K038/44.

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☐ 14. 6067989. 26 Feb 97; 30 May 00. Breath test for the diagnosis of Helicobacter pylori infection in the gastrointestinal tract. Katzman; Daniel E.. 128/898; 422/84 600/532 73/23.3. A61B019/00 C07C002/02.

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☐ 16. 5955054. 29 Apr 98; 21 Sep 99. Diagnostic assay for localizing H. pylori. Hartmann; John F.. 424/1.65; 424/1.11 424/9.1 424/9.4. A61K051/00 A61M036/14.

☐ 17. 5942409. 31 Jul 98; 24 Aug 99. Process for identification of substances modulating ureI dependent mechanisms of Helicobacter pylori metabolism. Sachs; George, et al. 435/32; 435/12 435/29 435/4. C12Q001/18 C12Q001/58 C12Q001/02 C12Q001/00.

☐ 18. 5900410. 12 Aug 97; 04 May 99. Monotherapy of peptic ulcers and gastritis. Hartmann; John F.. 514/81; 514/82 544/337. A61K031/675 C07F009/6561 C07F009/6558.

☐ 19. 5883079. 12 May 98; 16 Mar 99. Method for inhibiting H. pylori infection in mammalian tissue. Zopf; David A, et al. 514/25; 514/24 514/42 514/53 514/54 514/61 536/18.7 536/22.1 536/4.1. A61K031/715 A61K031/73.

☐ 20. 5854013. 19 May 97; 29 Dec 98. Method of determining the presence or absence of a nonparaffinophilic microorganism in a specimen. Ollar; Robert-A., et al. 435/34; 435/248 435/30. C12Q001/04.

☐ 21. 5848975. 29 Sep 97; 15 Dec 98. Breath test for helicobacter pylori. Phillips; Michael. 600/532; 128/898 600/300 600/543. A61B005/08.

☐ 22. 5542419. 28 Feb 94; 06 Aug 96. Noninvasive method to detect gastric Helicobacter pylori. Moulton-Barrett; Rex, et al. 600/366; 600/573. A61B005/08.

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☐ 25. 5498528. 10 Jun 94; 12 Mar 96. Detection of helicobacter pylori. King; Wing. 435/34; 435/29 435/4 435/810 436/63 436/74. C12Q001/04 C12Q001/02 G01N033/48 G01N033/20.

☐ 26. 5409903. 18 Feb 92; 25 Apr 95. Method and compositions for the treatment of H. pylori and dermatitis. Polak; Robert B., et al. 514/23; 424/402 424/447 424/449 424/451 424/464 424/489 424/499 514/865 514/870 514/925 602/904. A61K009/50 A61K015/00 A61K009/26.

☐ 27. 5214053. 02 Sep 92; 25 May 93. Thiourea derivatives and antimicrobial agent and antiulcer agent containing the same. Nakazawa; Keiichi, et al. 514/318; 514/321 514/452 514/464 546/194 546/197 549/362 549/365. C07D211/06.

☐ 28. 5190961. 02 Aug 91; 02 Mar 93. Thiourea derivatives and antimicrobial agent and antulcer agent containing the same. Hasegawa; Hirokazu, et al. 514/331; 514/308 514/318 514/326 514/343 514/353 514/422 514/428 514/438 514/447 514/471 514/472 514/586 546/193 546/213 546/214 546/231 546/276.4 546/305 546/331 548/517 548/527 548/567 549/482 549/496 549/69 549/77 564/17 564/22 564/23 564/27. A61K031/445 A61K031/40 A61K031/17 A61K031/34 C07L335/12 C07D403/10 C07D405/10 C07D409/10.

☐ 29. 4947861. 01 May 89; 14 Aug 90. Noninvasive diagnosis of gastritis and duodenitis. Hamilton; Lyle H.. 600/532; 128/898 600/543. A61O005/08.

☐ 30. 4923801. 13 Apr 87; 08 May 90. Compositions and methods for the enrichment and isolation of Campylobacter pylori and related organisms from biological specimens and the environment. Marshall; Barry J., et al. 435/12; 435/18 435/252.1 435/30 435/34. C12Q001/58 C12Q001/04 C12Q001/34 C12Q001/24.

☐ 31. 4830010. 22 Jan 88; 16 May 89. Methods for the diagnosis of gastrointestinal disorders. Marshall; Barry J.. 600/300; 436/811 600/532. A61B005/00.

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Terms	Documents
L9 and (method or process).clm.	31

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☐	L2	urea near2 channel	27

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☐	L2	L1 and (pylori or pyloris or pyloridis or pylorum or hpylori or h-pylori or helicobacter or helicobact).clm.	9
☐	L3	('6124271')!.PN.	1
☐	L4	(urei or ure-1 or amidase).clm.	193
☐	L5	L4 and (pylori or pyloris or pyloridis or pylorum or hpylori or h-pylori or helicobacter or helicobact).clm.	8
☐	L6	L5 and (method or process).clm.	7
☐	L7	L5 and (method or process).clm.	7
☐	L8	(pylori or pyloris or pyloridis or pylorum or hpylori or h-pylori or helicobacter or helicobact).clm.	431
☐	L9	L8 and ($urea or $cyanate).clm.	38
☐	L10	L9 and (method or process).clm.	31

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